BE **PROACTIVE**

2023

Goliath Performance Monitor Best Practices & Troubleshooting Guide
For Oracle Cerner

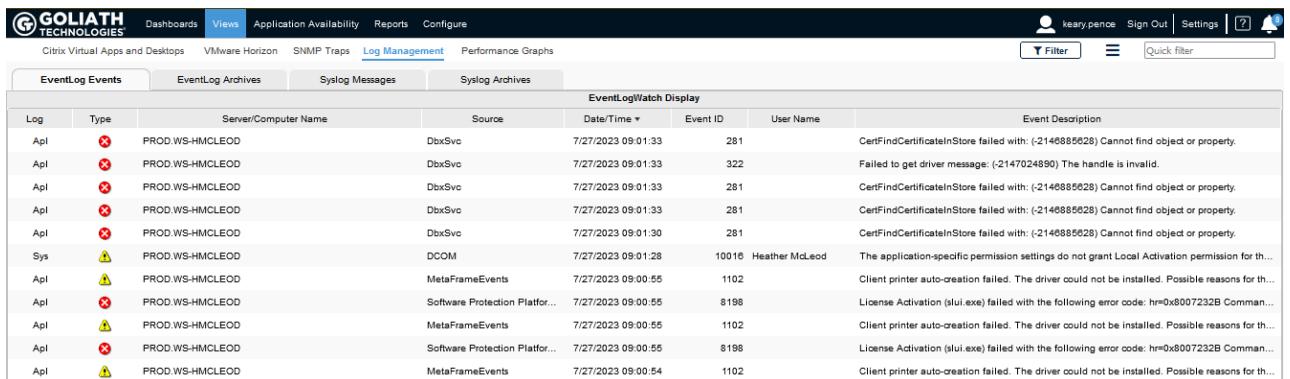GOLIATH TECHNOLOGIES

Contents

PROACTIVE MONITORING

Goliath intelligently and proactively monitors events, conditions and failure points in your environment 24/7/365 to ensure Millennium and your Citrix and VMware delivery infrastructure are available and operational. Our performance monitors are automatically set to industry thresholds without the user having to be an expert and we alert you in real time before your users are impacted. Goliath Performance Monitor provides:

Use of monitoring rules

Threshold Based Alerts: Embedded intelligence and automation work together to monitor over 250 key conditions, events, and failure points without manual set up and then automatically alert your team if thresholds are breached, before end users are impacted. Goliath automatically displays guidance on graphs and charts so that users know when certain values will trigger end user experience issues so that they don't need to be an expert to interpret the data.

- Creating & editing
- **Troubleshooting Best Practices:**
  - ✓ **Look at Error Logs and Event Logs:** Check server logs for error messages, warnings, and critical events. These logs can provide valuable insights into what's going wrong. Common log locations include system logs, application logs, and web server logs. Analyze the timestamps, error codes, and descriptions to identify the root cause of the issue.

Log	Type	Server/Computer Name	Source	Date/Time ▼	Event ID	User Name	Event Description
Apl	❌	PROD.WS-HMCLEOD	DbxSvc	7/27/2023 09:01:33	281		CertFindCertificateInStore failed with: (-2146885628) Cannot find object or property.
Apl	❌	PROD.WS-HMCLEOD	DbxSvc	7/27/2023 09:01:33	322		Failed to get driver message: (-2147024890) The handle is invalid.
Apl	❌	PROD.WS-HMCLEOD	DbxSvc	7/27/2023 09:01:33	281		CertFindCertificateInStore failed with: (-2146885628) Cannot find object or property.
Apl	❌	PROD.WS-HMCLEOD	DbxSvc	7/27/2023 09:01:33	281		CertFindCertificateInStore failed with: (-2146885628) Cannot find object or property.
Apl	❌	PROD.WS-HMCLEOD	DbxSvc	7/27/2023 09:01:30	281		CertFindCertificateInStore failed with: (-2146885628) Cannot find object or property.
Sys	⚠️	PROD.WS-HMCLEOD	DCOM	7/27/2023 09:01:28	10016	Heather McLeod	The application-specific permission settings do not grant Local Activation permission for th...
Apl	⚠️	PROD.WS-HMCLEOD	MetaFrameEvents	7/27/2023 09:00:55	1102		Client printer auto-creation failed. The driver could not be installed. Possible reasons for th...
Apl	❌	PROD.WS-HMCLEOD	Software Protection Platfor...	7/27/2023 09:00:55	8198		License Activation (slui.exe) failed with the following error code: hr=0x8007232B Comman...
Apl	⚠️	PROD.WS-HMCLEOD	MetaFrameEvents	7/27/2023 09:00:55	1102		Client printer auto-creation failed. The driver could not be installed. Possible reasons for th...
Apl	❌	PROD.WS-HMCLEOD	Software Protection Platfor...	7/27/2023 09:00:55	8198		License Activation (slui.exe) failed with the following error code: hr=0x8007232B Comman...
Apl	⚠️	PROD.WS-HMCLEOD	MetaFrameEvents	7/27/2023 09:00:54	1102		Client printer auto-creation failed. The driver could not be installed. Possible reasons for th...

Use of Application Availability Monitor

Goliath validates availability of Millennium and the entire Citrix delivery infrastructure (including the NetScaler). It intelligently ensures availability by executing real Citrix sessions that exercise the exact same steps a user takes during the Citrix logon process when accessing Millennium. Regardless of whether a user is remote or local, Goliath gives administrators an "early warning system" that allows them to know exactly what the Citrix end-user experience will be like for their users – in advance.

- [GAAM Technical Overview](#)

  Goliath Application Availability Monitor will show you where the point of failure is, so you have largely eliminated the typical disqualification process.
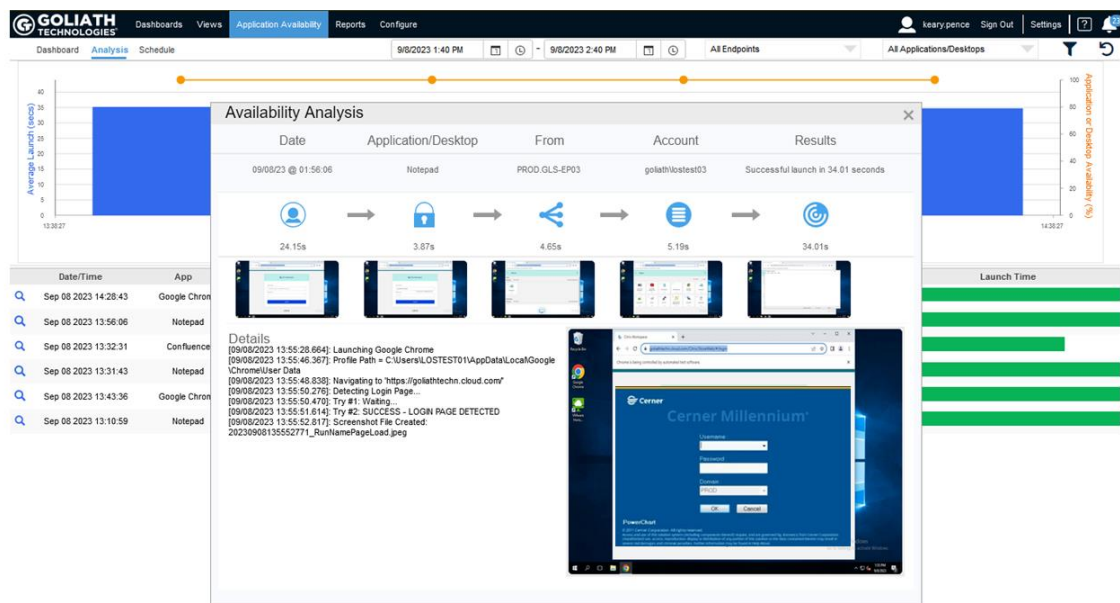
Depending on where the point of failure is, the following are some places to look when troubleshooting application availability issues:

## Troubleshooting Best Practices

- ✓ **Check Network Connectivity:** Ensure that your network connection is stable and functional. Try accessing other websites or services to confirm that the problem isn't related to your internet connection.
- ✓ **Review Server Status:** Check the status of the server hosting the application. You can do this by connecting to the server via remote access tools, SSH, or other management interfaces. Verify that the server is powered on, responsive, and not experiencing any hardware failures.
- ✓ **Check Application Logs:** Examine the application's logs for any error messages or warnings. Application logs can provide insights into what might be causing the unavailability. Look for any recent changes, exceptions, or error codes that can guide your investigation.

- ✓ **Web Server and Database Checks:** If the application relies on a web server (e.g., Apache, Nginx) or a database server, verify that these services are up and running. Ensure that they haven't crashed or exhausted resources.
- ✓ **Infrastructure Components:** Investigate any infrastructure components that the application relies on, such as load balancers, firewalls, content delivery networks (CDNs), and domain name system (DNS) settings. Misconfigurations or outages in these components can impact application availability.
- ✓ **Review Recent Changes:** Determine whether any recent changes were made to the application, server configurations, or network settings. Changes can introduce unintended issues. Revert recent changes or configurations if they are suspected to be causing the problem.
- ✓ **Resource Utilization:** Check the server's resource utilization, including CPU, memory, disk space, and network bandwidth. If resource usage is at or near capacity, it could be causing the application to become unresponsive.
- ✓ **Test Dependencies:** If the application relies on external services or APIs, test the connectivity to those services. Issues with external dependencies can impact the availability of your application.
- ✓ **Security Considerations:** In some cases, security measures like firewalls, security groups, or IP blocking might inadvertently prevent legitimate access to the application. Review security settings to ensure they are not blocking access.

## Citrix Discovery and Dependency Map Use

Goliath's Automatic Citrix Discovery and Dependency Map intelligently creates a dependency map of your entire Citrix infrastructure with true end-to-end visibility of the health of your Citrix infrastructure. This single, macro view used as a real-time NOC display of your Citrix environment gives administrators the ability to monitor, manage and troubleshoot issues with Citrix, whether the root cause is the Citrix infrastructure or the supporting IT elements. It shows the overall health of your environment at-a-glance and provides context-sensitive supporting metrics and details as you select each element. You can drill down and dynamically examine your environment and troubleshoot issues more easily since everything is broken down logistically.

- Eliminates the time it takes to correlate root-cause to elements in your environment by graphically representing all the connections between components in your Citrix infrastructure. Easily switch between data centers and farms to eliminate siloed architectures.
  - ✓ Drill down to the host level and view specific metrics for each element in your environment. View end user experience metrics for different layers in your environment at-a-glance.
    - **Physical Layer:**
      1. Automatically map your entire Citrix infrastructure to visualize connections, relationships, and health of components.
      2. Easily switch views to different data centers or locations.
      3. Correlate end user experience issues to delivery infrastructure components and health.
   4. See context-sensitive metrics and alerts for selected components.
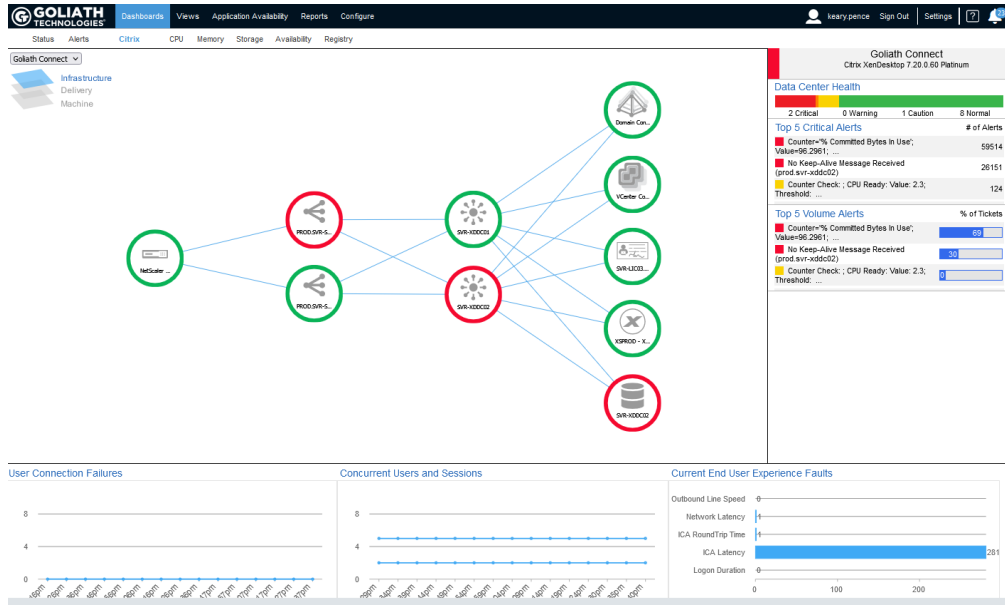
- **Delivery Layer:**
    1. Shows the logical connections and dependencies of your Citrix environment by delivery group, machine catalog, and down to the specific image.
    2. Correlates end user experience metrics for the selected delivery groups.
    3. Delivers context sensitive metrics for any selected component.
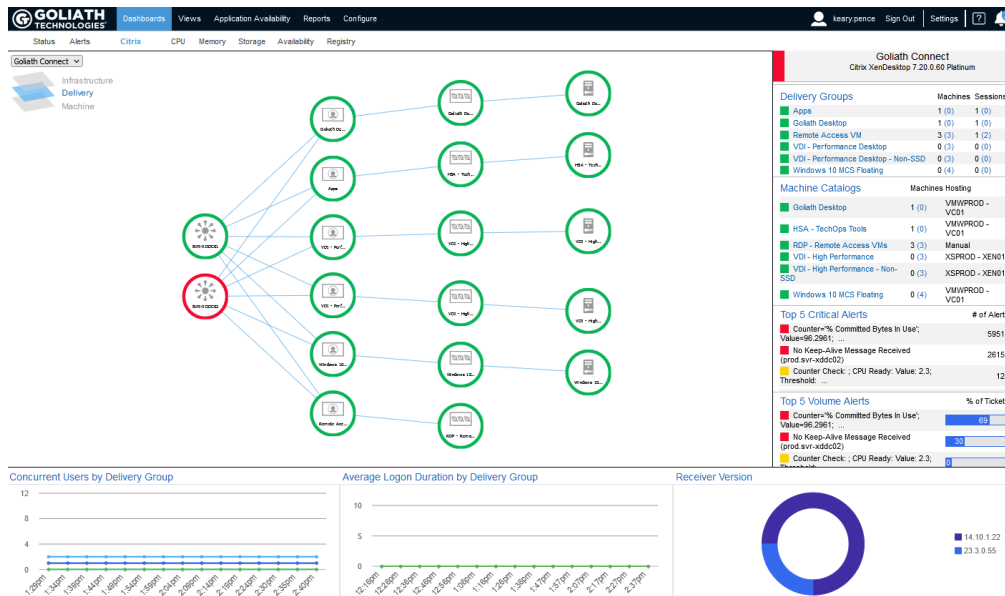
- **Machine Layer:**

1. In addition to the delivery group elements, the machine layer displays Citrix PVS and/or MCS as well as the hypervisor resources and hosts.
2. The details on the right pane will update according to the selected node.
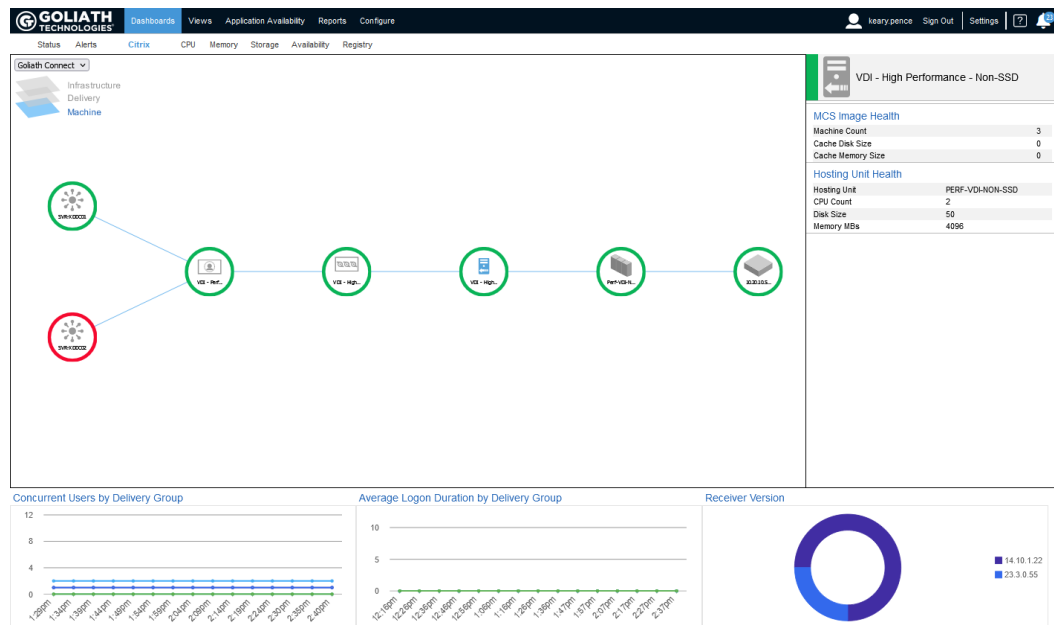
Top health checks that should be performed

Remember that Citrix environments can vary in complexity, and these health checks should be tailored to your specific deployment. Regularly reviewing the health of your Citrix Delivery Infrastructure can help prevent issues, ensure user satisfaction, and maintain a stable virtualization environment.

- ✓ **Client version:** Be sure to maintain the latest supported version of Citrix Workspace app to ensure security, compliance, and user experience are always at their best. It is never advisable to use unsupported software versions.
- ✓ **Licensing:** Verify that your Citrix licenses are valid and properly configured. Ensure that license servers are reachable and have sufficient licenses available for the number of users or devices.
- ✓ **Connection and Access:** Confirm that users can successfully connect to published applications and desktops. Check for any connectivity issues, broken links, or firewall rules that might be causing connection problems.
- ✓ **StoreFront/Web Interface**: Check the health of your StoreFront (or Web Interface) server. Ensure that it is responsive, load-balanced properly (if applicable), and capable of presenting published resources to users.
- ✓ **Delivery Controllers**: Assess the health of your Delivery Controllers. Ensure they are responsive, not overloaded, and properly configured. Verify that they are replicating configuration data and are reachable from remote sites if applicable.
- ✓ **Resource Utilization:** Monitor the resource utilization of all Citrix components, including CPU, memory, disk space, and network bandwidth. High resource usage can impact performance and availability.

- ✓ **Hypervisor and Virtualization Layer:** If you're using virtualized infrastructure, check the health and performance of your hypervisor platform (e.g., VMware, Hyper-V). Make sure that virtual machines are properly provisioned and are not facing resource constraints.
- ✓ **Database Health:** Citrix relies on a database to store configuration data. Ensure that the database server is responsive, and the database size is manageable. Regularly back up and maintain your database.
- ✓ **Active Directory Integration:** Confirm that Active Directory integration is working correctly. Check if user authentication and group policies are functioning as expected.
- ✓ **Performance Monitoring:** Implement performance monitoring tools to track user sessions, application response times, and overall system performance. Identify bottlenecks and areas that require optimization.
- ✓ **User Experience:** Continuously gather user feedback and monitor their experience. Slow logins, application launches, or responsiveness can impact user satisfaction.
- ✓ **SSL Certificates:** Verify that SSL certificates used for secure communication (HTTPS) are valid, not expired, and properly configured on all relevant components.
- ✓ **Backup and Disaster Recovery:** Ensure that you have backup and disaster recovery plans in place. Regularly test backups and recovery procedures to ensure you can quickly restore services in case of a failure.
- ✓ **Patch Management:** Keep your Citrix infrastructure up to date with the latest patches and updates. Regularly review and apply Citrix updates to address security vulnerabilities and improve stability.
- ✓ **Security Audits:** Perform security audits to ensure that access controls, authentication mechanisms, and data protection measures are in place and effective.
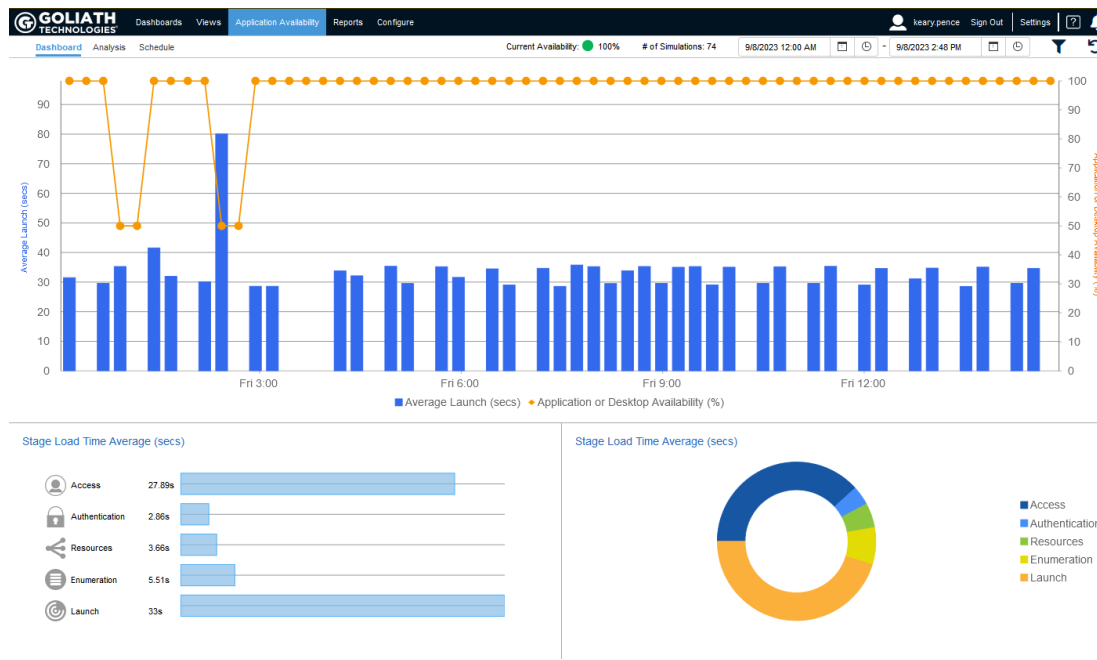
TROUBLESHOOTING

End User Experience issues related to:

Logon initiation

When there is a logon failure, an administrator receives an alert immediately. Using the simulation details, an administrator can quickly pinpoint where the failure occurred and the root cause.

- ✓ [GAAM Endpoints Are Not Appearing When Configuring Schedules](#)
- ✓ [VMWare Horizon GAAM Not Launching](#)
- ✓ [How to Remove Citrix Receiver/Workspace Pop-Up from GAAM Launches](#)
- ✓ [Access Stage Failure & Unable to Start Error](#)
- ✓ [GAAM – Launch Fails due to "COM Class Error"](#)
- ✓ [Application Launch Not Identified](#)

Logon duration

Citrix Logon Duration monitoring and troubleshooting functionality you can capture real-time Logon Duration times and get alerted to end user logon slowness on any of the 33+ Logon Duration Stages.

- ✓ [Logon Duration Guide](#)
- ✓ [Troubleshooting: Citrix Logins Take Too Long](#)
- ✓ [Troubleshooting Logon Duration – Alerting, Reporting & High-Level Workflow](#)
- ✓ [Troubleshooting Logon Duration – Root Cause UPM Profiles](#)
- ✓ [Troubleshooting Logon Duration – Root Cause Citrix Broker Service](#)
- ✓ [Troubleshooting Logon Duration – Root Cause Drive Mapping Extensions](#)
- ✓ [Troubleshooting Logon Duration – Domain Controller Networking](#)
- ✓ [Troubleshooting Logon Duration – From GAAM to GPM](#)
- ✓ [Troubleshooting Tips for Common Citrix Broker Errors](#)
- ✓ [Troubleshooting: Interactive Session is High](#)
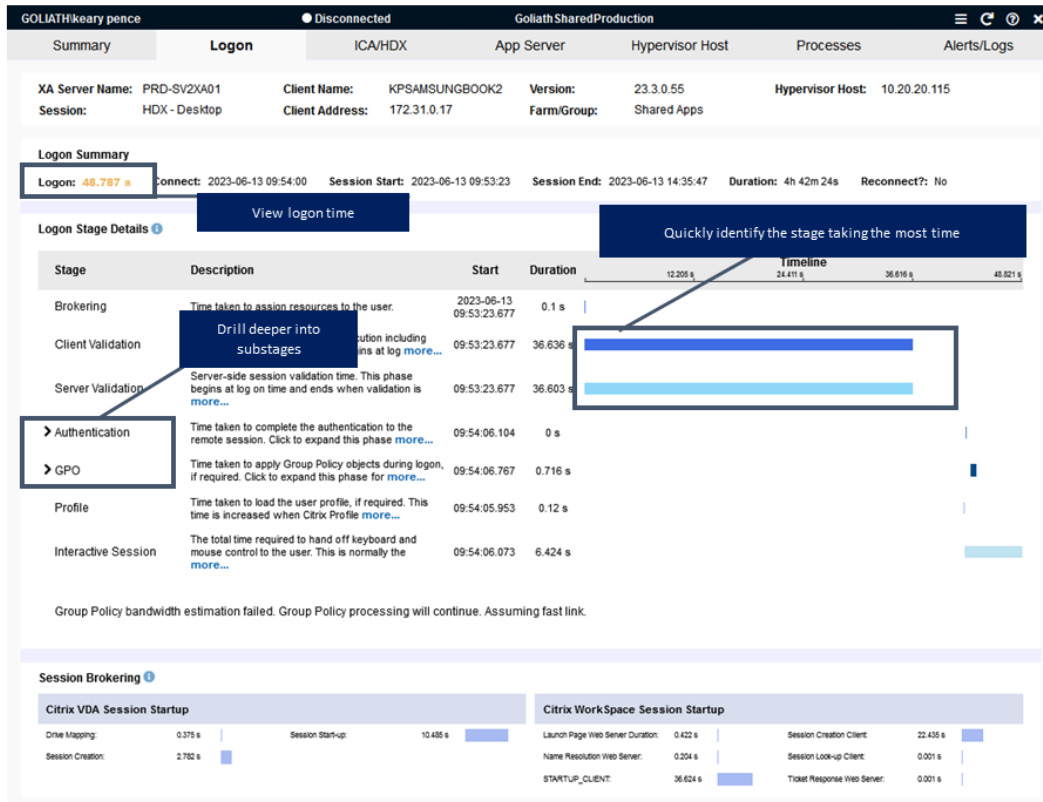
Session performance

- ✓ [Troubleshooting: Citrix Sessions Are Slow](#)
    - o Session Slowness During Specific Scenarios or Issues
- ✓ [Troubleshooting Citrix Session Slowness – Streaming Audio/Video](#)
- ✓ [Troubleshooting Citrix Session Slowness – Network Latency](#)
    - o Widespread Session Slowness
- ✓ [Troubleshooting Citrix Session Slowness – Storage Latency](#)
    - o Localized slowness issues
- ✓ [Troubleshooting Citrix Session Slowness – ICA RTT & Server Performance](#)
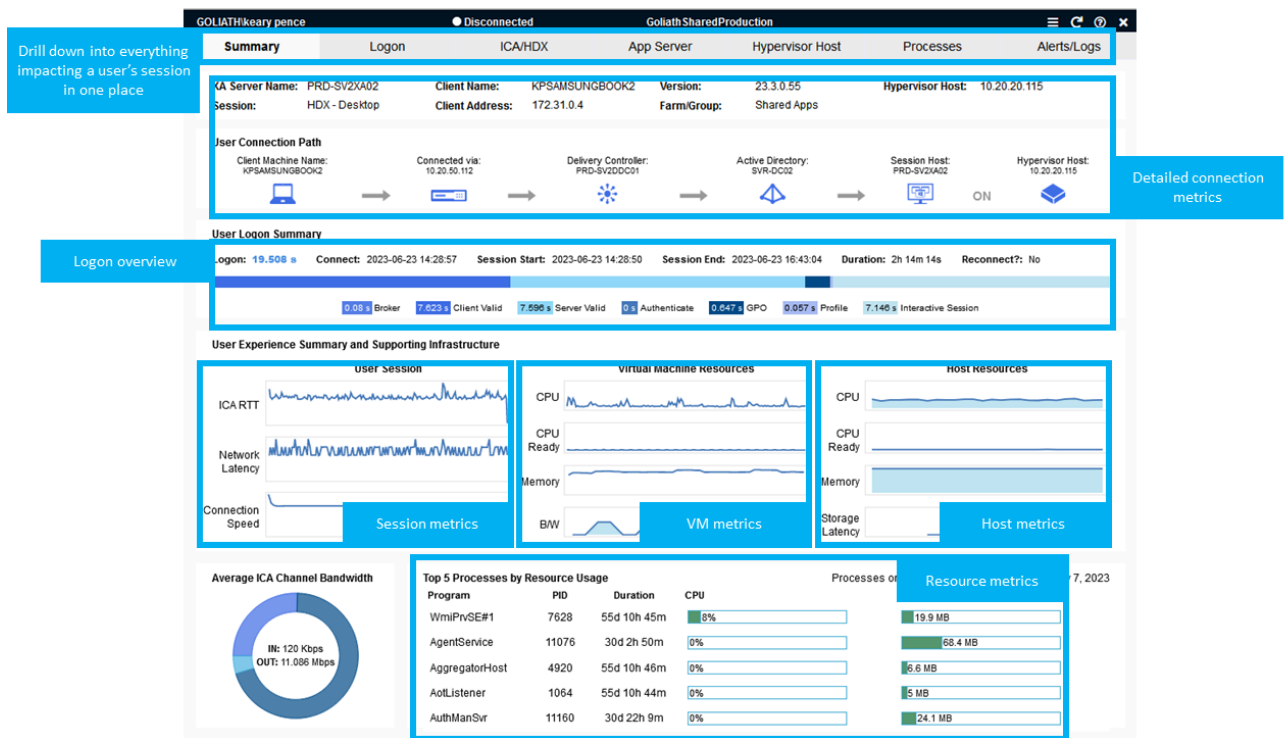
Proactive Monitoring of Server Infrastructure

- Real Time Dashboards and Historical Reports
- Daily health check reports
- One console for Citrix XenServer host, VM's, applications, OS, and hardware
- Automated Citrix Server monitoring & alerting on thresholds, events & faults
- Citrix XenServer monitoring & issue resolution remediation sequences
- Advanced troubleshooting with application > user > XenServer correlation
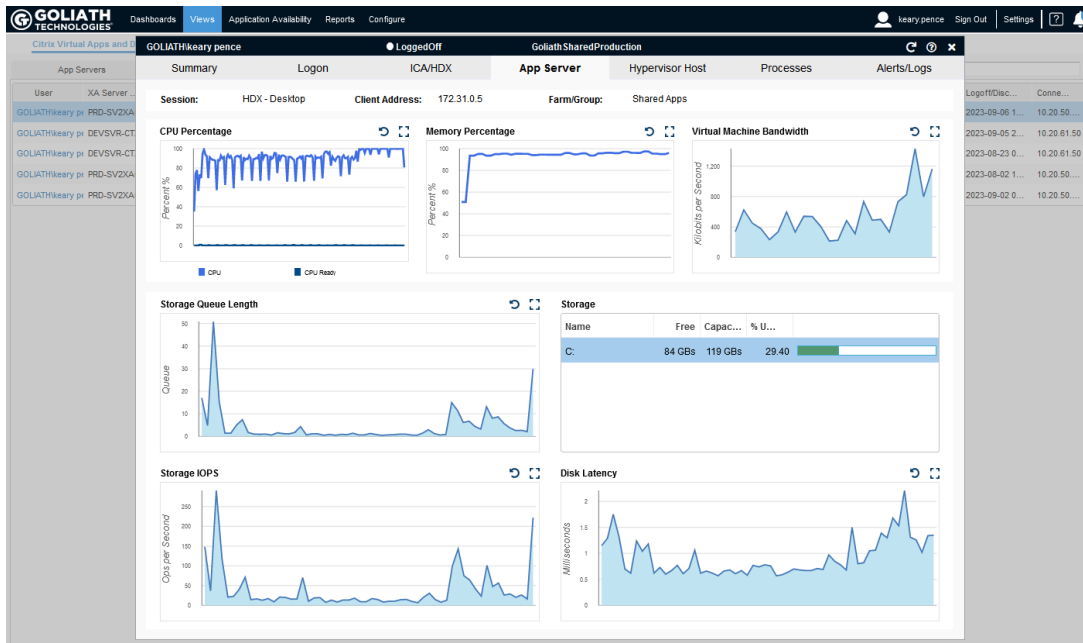
Troubleshooting Best Practices

When troubleshooting server issues, it's important to systematically diagnose and resolve problems to minimize downtime and ensure the smooth operation of your services. Here are three key things to look at:

- ✓ **Error Logs and Event Logs:** Check server logs for error messages, warnings, and critical events. These logs can provide valuable insights into what's going wrong. Common log locations include system logs, application logs, and web server logs. Analyze the timestamps, error codes, and descriptions to identify the root cause of the issue.
- ✓ **Resource Utilization and Performance Metrics:** Monitor the server's resource utilization, such as CPU usage, memory usage, disk I/O, and network traffic. High resource usage could indicate a bottleneck or misconfiguration. Use monitoring tools to collect and analyze performance metrics. This can help you pinpoint whether the issue is related to insufficient resources, inefficient code, or unexpected spikes in usage.
- ✓ **Network Connectivity and Firewall Settings:** Check network connectivity between the server and other devices/services. Ensure that firewalls, security groups, or access control lists aren't blocking the necessary traffic. Test both inbound and outbound connectivity. Network issues can lead to unresponsive services or slow performance, so diagnosing and resolving them is crucial.
- ✓ Remember, troubleshooting server issues is often an iterative process. Start with these three areas, and if you're not able to identify the problem, you might need to delve deeper into specific application configurations, server software settings, or even hardware components. Document your troubleshooting steps and their outcomes to help you track progress and share information with colleagues or support teams if needed.
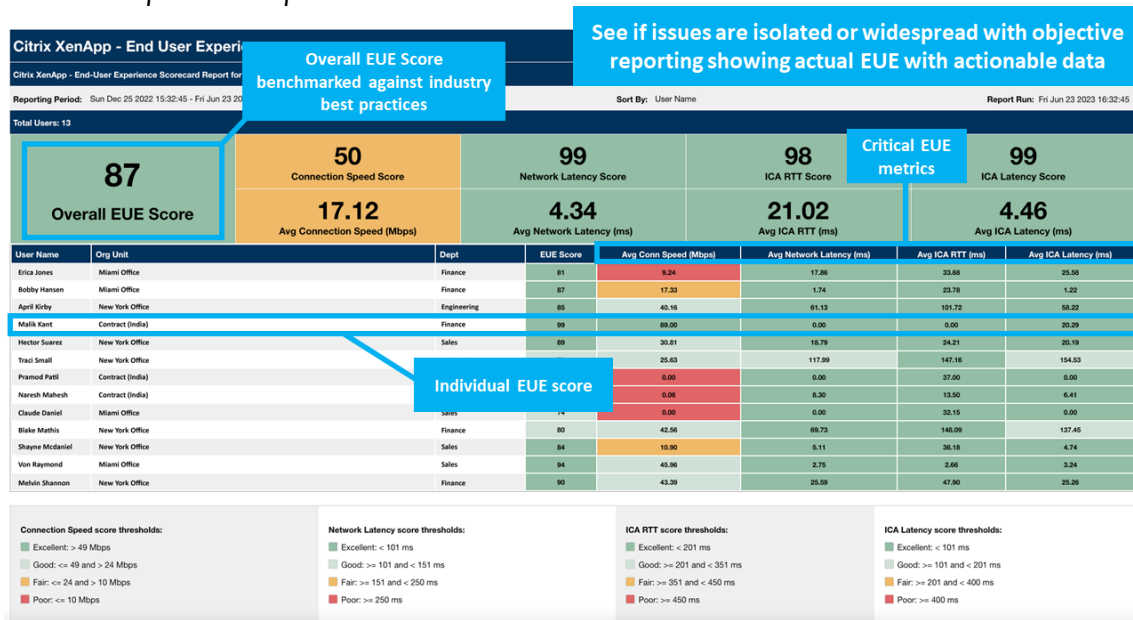- ✓

REPORTING

Within Goliath Performance Monitor, there are a number of reports available, out of the box, which can be run to assess your Citrix Virtual Apps and Desktops environment. These reports can be scheduled or run on demand and emailed as PDF or CSV files.

End User Experience reports

Industry-only user experience reports that provide objective user experience scores for individual users and environment as a whole. These reports were created to address three main challenges that organizations came to us with:

1. There was no way to objectively represent how well they were doing in terms of end user experience. Instead, that was left to subject surveys or hearsay.
2. They didn't have the data they needed to improve end user experience.
3. If there were problems, they didn't have a way to understand how widespread an issue it was.

End User Experience Report

Logon Duration Report

Citrix XenApp - XenApp Logon Duration Scorecard (Location)

Citrix XenApp - LogOn-Duration Scorecard Report for

Reporting Period: Mon May 15 2023 09:02:53 - Mon M

Sort By: User Name

Report Run: Mon May 22 2023 09:02:53

Overall Logon Score benchmarked against industry best practices

See if issues are isolated or widespread with objective reporting showing actual EUE with actionable data

Total Users: 6

13.37s Avg Initial Logon Duration	**10.78s** Avg Reconnect Duration	**443** Total Initial Connections	**441** Logons <= 30s	Critical EUE metrics	**0** Logons > 60s
		5 Total Reconnects	**3** Logons <= 10s		**0** Logons > 45s

User Name	Org Unit	Avg Initial Logon (sec)	Avg Reconnect (sec)	Total Logons
GOLIATH\Floyd Roberts	corp.goliathtechnologies.com/Accounts/Service Accounts	27.32	0.00	2
GOLIATH\Heather McLeod	corp.goliathtechnologies.com/Accounts/Goliath	17.48	0.00	1
GOLIATH\keary.pence	corp.goliathtechnologies.com/Accounts/Goliath	21.23	13.47	13
GOLIATH\LOSTEST01	corp.goliathtechnologies.com/Test Accounts/TestLevel1/TestLevel2	11.82	0.00	224
GOLIATH\LOSTEST03	corp.goliathtechnologies.com/Test Accounts	14.54	0.00	207
GOLIATH\Ted.Rainey	corp.goliathtechnologies.com/Accounts/Goliath	17.35	0.00	1

Individual EUE score

Initial Logon score thresholds:
- Excellent: < 31 s
- Good: >= 31 and < 45 s
- Fair: >= 45 and < 60 s
- Poor: >= 60 s

Reconnect score thresholds:
- Excellent: < 11 s
- Good: >= 11 and < 25 s
- Fair: >= 25 and < 45 s
- Poor: >= 45 s

- **Best Practices for Use**
  In looking at the report you will see all the users that accessed the Citrix environment during the specified time frame and their respective EUE score on a scale of 0-100, 0 being the worst, 100 being the best. Those overall EUE scores are based on the individual metrics included in the report (Connection Speed, Network Latency, RTT, and ICA Latency) scored based on the legend at the bottom of the report (Citrix published best practices of what is considered poor, fair, good, and excellent). All of the user's data points then calculate an overall EUE score and overall averages for each of the respective metrics. This allows us to quickly see how the environment is performing as a whole, areas for improvement, which users are having the worst experience and at a high level what could be causing it.
  - ✓ Clients will often look at the users with the worst user experience scores as a way to proactively identify issues as opposed to having to wait for a user to complain or submit a ticket. The following steps are ways to use this report in conjunction with the data in the Citrix session display data within the "Views" tab of the product.
  - ✓ ICA RTT is a great metric to first look at to understand if a user was experiencing latency. If RTT is in the red, that is a good indicator that the user was having a less than optimal user experience. From here, tips to look at in the report are as follows:
    - Is there high Avg Network Latency (red or orange)? If so, we now understand there is a network bottleneck. From there, what is Connection Speed stating? If connection speed is low, that is an indication that Citrix could be having a difficult time accessing enough bandwidth on the client side to support a satisfactory Citrix session.
      1. Possible next steps:
         a. Take a look at the Session display view to review metrics such as Client IP address, Client (workstation the user is connecting into the Citrix environment from), and workspace version.
            i. Client IP: Based on the Client IP address we can likely identify valuable information such as where the user was

working from (ex: remote, on-site, particular physical location, VPN connection). If working remotely, discuss options such as moving closer to the router, sending an ethernet cable to plug in directly, ask other users connecting to the same access point to drop. If working on site and the user has poor connectivity, some options to check are:

 ii. Are other users with similar Client IP address (potentially indicating they are working within a close proximity) also having poor levels of connection speed? This could indicate there is a faulty switch that is causing issues or that the access point is being oversaturated.

 iii. If we identify connectivity issues for multiple users with similar Client IP's this could be something good to let the on-site network team be aware of.

 iv. Client Device: Is the user that is having an issue always working from the same device? If they are, is this an isolated issue (other users connecting from similar physical locations are not having the same issues)? If so, could it be a device issue (ex: poor NIC card).

  1. Workspace Version: Is this out of date? Citrix publishes each workspace version and EOL dates (https://www.citrix.com/support/product-lifecycle/workspace-app.html) to compare. As a best practice, the Workspace version should be upgraded to the most recent version that is supported by the applications the users are accessing otherwise issues could occur (Citrix Receiver Blog Monica Griesemer (goliathtechnologies.com)).

b. If Network Latency is high (in the red or orange) and Connection Speed is found (green), that is an indication that there is a network bottleneck, but it isn't coming directly from the client side. In this scenario, factors to consider are:

 i. Is there a network bottleneck between RHO and the end user outside of the client-side connection? Depending on networking configuration this could be an RHO network issue, on-site network issue, hops between RHO and end user (is there a geographical barrier such as physical distance between end user and RHO), etc.

c. If RTT is high (red or orange) and ICA Latency is low (green), this could be an indicator that there is a server or application performance issue. Possible next steps would be to look at the Citrix session display, look for the user's session at hand, once the appropriate session is selected, we can navigate to the "App Server" tab to view how the session host (Citrix server in RHO) was performing during the time frame of the users session. Here

we can identify if there was a resource utilization bottleneck such as CPU, Memory, or Storage.

  i. For active sessions, in the event we want more granular detail we can then navigate to the "Apps/Processes" tab within the user's session to see the specific process utilization that is occurring on the server. If there are processes that are consuming a high percentage of CPU or Memory, that could be an indicator of an application issue or that the server has been under provisioned to support specific types of user workflows.

Infrastructure performance reports

✓ Application Availability – With the Goliath Application Availability Monitor (GAAM), data can be retained in the database for an unlimited amount of time. The purpose of this document is to review the process of configuring historical reports. These reports can be scheduled or run on-demand and will list all the launches that succeeded or failed and will also contain a copy of all the logs in collapsible frames.

✓ **Citrix XenApp Reports** (published apps & desktops w/ServerOS)
  o Average ICA Latency by Location - This report displays the Average ICA Latency by Active Directory Organization Unit (OU).
  o Connections by Location - This report displays the total connections by Active Directory Organization Unit (OU).
  o End User Experience Scorecard – The primary focus of this report is to provide a summary of your end user Citrix session experience by using a score to rate the environment and individual users.

- Logon Duration Scorecard – The main focus of this report is to provide a summary of your end user Citrix session logon experience by using a score to rate the environment and individual users.
- Reconnects by Location – This report displays the total reconnections by Active Directory Organization Unit (OU).
- End User Productivity Report – This report displays user interaction time (keyboard and mouse activity, for example) for the session duration (from log on to disconnect). In addition, you can see total inactivity time (where user was not interacting with the session/app or desktop) and the longest period of time where a user was inactive. This report is only applicable for Citrix versions 7.x and newer.
- Client Report – The main focus of this report is to monitor the end user client information. The report lists out client IP address of where your users are connecting in from, what type of device they are using and the Citrix Receiver/Workspace app version along with other metrics. Please note, the "device type" metric requires the Goliath Intelligent Agent to be installed on the XenApp Server and connected to Goliath during the user session. Many of our customers have specific Citrix Receiver/Workspace app versions that they require their end users to connect. They will often use this report to confirm if everyone is meeting their standards.
- End User Activity Report – The primary focus of this report is to track the usage of Citrix for your end users. The report includes the number of unique users how have connected into the environment, along with the users last connection d/t, number of sessions they've had and how many hours the users were actively working in their session. With more and more companies allowing end users to work from home, this report allows management to validate productivity.
- End User Experience Report – The main focus of this report is to provide a summary of your end user Citrix session experience by providing 2 key performance indicators: Logon Duration & ICA Latency.
- Environment Summary Report – The main focus of this report is to provide a summary of your Citrix environment along with end user experience to analyze trends and where there may be bottlenecks.
- ICA Latency Report – The primary focus of this report is to identify users who are having poor session performance. The performance indicator that Citrix uses is ICA Latency. The report will also show Network Latency and ICA RTT as these two metrics are the main drivers of ICA Latency to help give perspective on why the latency may have been high. This report can be configured to show the Top 20 user sessions with the highest average or maximum latency or to show all user sessions over "X" ms of average or maximum latency.
- License Usage Report – The primary focus of this report is to break down concurrent user sessions counts, per delivery group, on a minimum, maximum and average basis to assist with licensing. If you are licensed for Topology View, you also have the option to see this data on a per Citrix Site/Farm basis.
- Peak Usage Report – Similar to the License Usage Report, the main focus of this report is to break down concurrent user sessions counts, per delivery group, on a minimum, maximum and average basis to assist with licensing and usage patterns.

- Server Health Report – The main focus of this report is to provide you an overview of your environment in terms of resources & load. This is a point in time snapshot type report. It is not historical.
- Session Activity Report – The main focus of this report is to provide you with an export of all of the user sessions that took place over a specific time frame. The report includes information on what application was used, connection & state change times and client information. Our customers will often use this report to get an idea of how frequently specific applications are being used.
- Logon Duration Report – The main focus of this report is to allow you to compare logon duration times for many users at the same time. In doing so, this report allows our customers to easily identify patterns in the environment that could be causing high logon duration.
- End to End Connection Report – The main focus of this report is to allow you to see the entire progression of an application launch. The report will list all of the user sessions, client information, what storefront was used and what broker/delivery controller was used.
- ✓ **Citrix XenDesktop Reports (virtual desktops with DesktopOS)**
  - Average ICA Latency by Location – This report displays the Average ICA Latency by Active Directory Organization Unit (OU).
  - Connections by Location – This report displays the total connections by Active Directory Organization Unit (OU).
  - End User Experience Scorecard – The main focus of this report is to provide a summary of your end user Citrix session experience by using a score to rate the environment and individual users.
  - Logon Duration Scorecard – The main focus of this report is to provide a summary of your end user Citrix session logon experience by using a score to rate the environment and individual users.
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  - Client Report – The main focus of this report is to monitor the end user client information. The report lists out client IP address of where your users are connecting in from, what type of device they are using and the Citrix Receiver/Workspace app version along with other metrics. Please note, the "device type" metric requires the Goliath Intelligent Agent to be installed on the VDI and connected to Goliath during the user session. Many of our customers have specific Citrix Receiver/Workspace app versions that they require their end users to connect. They will often use this report to confirm if everyone is meeting their standards.
  - End User Activity Report – The main focus of this report is to track the usage of Citrix for your end users. The report includes the number of unique users how have connected into the environment, along with the users last connection d/t, number of sessions they've had and how many hours the users were actively working in their

session. With more and more companies allowing end users to work from home, this report allows management to validate productivity.

- o [Environment Summary Report](#) – The main focus of this report is to provide a summary of your Citrix environment along with end user experience to analyze trends and where there may be bottlenecks.
- o [ICA Latency Report](#) – The main focus of this report is to identify users who are having poor session performance. The performance indicator that Citrix uses is ICA Latency. The report will also show Network Latency and ICA RTT as these two metrics are the main drivers of ICA Latency to help give perspective on why the latency may have been high. This report can be configured to show the Top 20 user sessions with the highest average or maximum latency or to show all user sessions over "X" ms of average or maximum latency.
- o [License Usage Report](#) – The main focus of this report is to break down concurrent user sessions counts, per delivery group, on a minimum, maximum and average basis to assist with licensing. If you are licensed for Topology View, you also have the option to see this data on a per Citrix Site/Farm basis.
- o [Peak Usage Report](#) – Similar to the License Usage Report, the main focus of this report is to break down concurrent user sessions counts, per delivery group, on a minimum, maximum and average basis to assist with licensing and usage patterns.
- o [Health Report](#) – The main focus of this report is to provide you an overview of your environment in terms of resources & load. This is a point in time snapshot type report. It is not historical.
- o [Session Activity Report](#) – The main focus of this report is to provide you with an export of all of the user sessions that took place over a specific time frame. The report includes information on connection & state change times and client information.
- o [Logon Duration Report](#) – The main focus of this report is to allow you to compare logon duration times for many users at the same time. In doing so, this report allows our customers to easily identify patterns in the environment that could be causing high logon duration.

ADMIN DAILY USE BEST PRACTICES

Goliath Performance Monitor is a tool designed to help IT professionals monitor, analyze, and troubleshoot their IT infrastructure and applications. Using it daily can provide valuable insights into the performance of your systems.

Here's how you might use Goliath Performance Monitor in your daily routine:
- ✓ **Dashboard Overview**: Start your day by checking the Goliath Performance Monitor dashboard. This can give you a quick overview of the health and performance of your critical systems, applications, and infrastructure components. Look for any immediate anomalies or issues.
- ✓ **Alerts and Notifications**: Review any alerts or notifications that have been triggered since your last check. Investigate the alerts that might require immediate attention. Address critical issues first to ensure the smooth functioning of your systems.
- ✓ **Trending Analysis:** Analyze the trending data for performance metrics over the past day or week. Look for patterns that might indicate potential issues. Monitoring trends can help you identify gradual performance degradation before it becomes a major problem.
- ✓ **Capacity Planning:** Evaluate resource utilization metrics such as CPU, memory, disk, and network usage. Identify any components that are consistently operating at high utilization levels. This information can help you plan for capacity upgrades or optimizations.
- ✓ **User Experience Monitoring:** Use user experience monitoring features to track user sessions, logon times, and application responsiveness. Identify any instances of slow logins or poor user experiences and investigate the underlying causes.
- ✓ **Application Performance:** Check the performance metrics of critical applications. Look for any trends of increased response times or errors. This information can help you pinpoint whether the issue lies within the application or the underlying infrastructure.
- ✓ **Infrastructure Components:** Monitor the health of infrastructure components such as servers, virtual machines, network devices, and databases. Ensure that they are operating within normal parameters and address any deviations.
- ✓ **Database Performance:** If you're using databases, keep an eye on their performance metrics. This includes query response times, database size, and transaction rates. Address any performance bottlenecks that might impact your applications.
- ✓ **Log Analysis:** Goliath Performance Monitor can also capture logs and event data. Regularly review logs for any patterns of errors, warnings, or other unusual activities. This can help you proactively identify issues before they impact performance.
- ✓ **Collaboration and Reporting:** Use Goliath Performance Monitor's reporting capabilities to generate performance reports and share insights with your team. Collaborate on troubleshooting efforts and track progress together.
- ✓ **Incident Response:** If an issue arises, use Goliath Performance Monitor to quickly diagnose the problem. Identify which components are affected, investigate the root cause, and take corrective actions.
- ✓ **Documentation:** Document any incidents, investigations, and actions taken using Goliath Performance Monitor. This documentation can be valuable for future reference and for improving incident response processes.
- ✓ **Continuous Improvement:** Use the insights gained from Goliath Performance Monitor to drive continuous improvement. Identify areas where performance can be optimized, plan for upgrades or adjustments, and implement changes as needed.

✓ Remember that the specifics of how you use Goliath Performance Monitor daily will depend on your organization's unique IT environment and priorities. The goal is to proactively identify and address performance issues to ensure the reliability and optimal functioning of your systems.

TROUBLESHOOTNG SUPPORT

KIP

AI troubleshooting assistant: An AI-powered IT troubleshooting tool can greatly benefit end users by providing quick and accurate assistance when they encounter technical issues.
Best practices for using KIP

- ✓ **Describe the Problem:** The end user would describe the problem they are facing in plain language. This could involve explaining symptoms, error messages, or any other relevant details about the issue.
- ✓ **Receive Instant Suggestions:** Based on the information provided, KIP would instantly generate suggestions or potential solutions. These suggestions could include steps to troubleshoot the issue, links to relevant articles, or recommendations to try common fixes.
- ✓ **Follow Guided Troubleshooting:** If the issue persists, KIP might guide the user through a series of troubleshooting steps. These steps could involve checking settings, verifying connectivity, or performing diagnostic tasks.

In-product KB & support training

IT support teams use in-product knowledge base resources to provide efficient and consistent assistance to users encountering technical issues. Goliath's knowledge base is a repository of information, guides, troubleshooting steps, and solutions that is directly accessible from within the software.

Best practices for using the Goliath Support Center:

- ✓ **User Self-Service:** In-product knowledge base resources empower users to troubleshoot and resolve common issues on their own. Users can access relevant articles, step-by-step guides, and frequently asked questions directly within the application's interface.
- ✓ **Quick Problem Resolution:** IT support teams can quickly access detailed instructions and solutions to common problems. This enables them to provide accurate and timely assistance to users, reducing resolution time.
- ✓ **Consistency:** In-product knowledge bases ensure that support teams deliver consistent information and solutions to users. This reduces confusion and ensures that all users receive accurate guidance.